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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,569	01/30/2001	James P. Clarkin	P 00277116	1204

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EXAMINER

TRAN, MY CHAU T

ART UNIT	PAPER NUMBER
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1639

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/771,569	Applicant(s) CLARKIN ET AL.	
	Examiner MY-CHAU T TRAN	Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 2,6,7,16,18,32 and 37-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8-15,17,19-31 and 33-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/30/01 & 10/8/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/10/04 has been entered.

Status of Claims

2. Applicant's amendment filed 2/10/04 is acknowledged and entered. Claim 1 has been amended.
3. Claim 1 was amended by the amendment filed on 8/19/03.
4. Claims 1-41 are pending.
5. This application claims priority to a provisional application 60/254,881 filed 12/13/2000.

Election/Restrictions

6. Claims 2, 6-7, and 37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to ***nonelected inventions***, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/20/03.

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7. Applicant has elected the following species for the elected invention (Claims 1, 3-5, 8-36, and 38-41):

- a. Species A/F (channel cross sectional area): 0.0001 mm^2 to 1 mm^2 .
- b. Species B/G (channel length): 1 mm to 1 km
- c. Species C (substrate): glass
- d. Species D (exterior coating): polyimide
- e. Species E (interior coating): hydrophobic bonded phases
- f. Species H (endcap substrate): glass

8. Claims 16, 18, 32, and 38-41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to *nonelected species*, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/10/03.

Information Disclosure Statement

9. Second copies of the information disclosure statement (IDS) submitted on 1/30/01 and 10/8/02 that has been considered by the examiner in the Office Action mailed 5/19/03 are being provided to applicant to ensure that applicant has received these PTO-1449 forms.

10. Claims 1, 3-5, 8-15, 17, 19-31, and 33-36 are treated on the merit in this Office Action.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1, 3-5, 8-15, 17, 19-31, and 33-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase of "drawn from a preform" is indefinite because it is incomplete (i.e. a preform what?). It is suggested that applicant add the term "body" to the phrase for completeness.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al. (US Patent 5,922,591).

The instant claimed device comprise of a substrate having two channels formed therein. The channels comprise of inlets, outlets, spaced apart, and are in a parallel direction. The device further comprise of at least one "endcap" channel (It is interpreted as the connection between two channel) being in fluid communication with at least one channel. The "endcap" substrate is interpreted as the same substrate of the device.

The process limitation of "said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein" has amended claim 1 to a product-by-process claim.

Anderson et al. disclose a device as claimed in claim 1. The device comprises various reaction chambers and fluid passages (channels), which is manufactured onto the surface of the substrate (i.e. substrate having two channels formed therein wherein the channels comprise of

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inlets, outlets, spaced apart, and are in a parallel direction) (col. 17, lines 59-61; fig. 12c; col. 19, lines 29-33). The fluid channels have smaller dimensions relative to the chambers and range about 10 μm wide and 1 μm deep (e.g. a cross sectional area of about 0.1 mm^2) (col. 18, lines 30-40) (referring to claim 4). The body of the device (substrate) comprise of glass (referring to claim 15 and 31). The surfaces of the channel may be made more hydrophobic by coating the surface (col. 20, lines 33-40) (referring to claim 19). The channel comprise of inlets and outlets valves (col. 30, lines 41-50). In figure 12c, the device comprises a plurality of channels, wherein the main channel is ref. # 1252 (col. 30, lines 26-31). The various channels connecting the chambers to the main channel are in a parallel direction. The channels comprise of a “bend” (“endcap” channel) that connect two channels together and are spaced apart (fig. 12c).

Therefore, the device of Anderson et al. anticipates the presently claimed invention.

Additionally, the added process limitation of “*said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein*” has amended claim 1 to a product-by-process claim. The instant claims are written as product-by-process claims. “*Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claims is same or as obvious from the product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.*” *In re Thorpe*, 777 F. 2d 695, 698, 227 U. S. P. Q. 964, 966 (Fed. Cir. 1985). See MPEP 2113. Thus the device of Anderson et al. would still anticipates the presently claimed device since it meets all the structural limitation of the claimed device that is substrate having

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two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction.

15. Claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Beattie (US Patent 5,843,767).

The instant claimed device comprise of a substrate having two channels formed therein. The channels comprise of inlets, outlets, spaced apart, and are in a parallel direction. The device further comprise of at least one "endcap" channel (It is interpreted as the connection between two channel) being in fluid communication with at least one channel. The "endcap" substrate is interpreted as the same substrate of the device.

The process limitation of "said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein" has amended claim 1 to a product-by-process claim.

Beattie discloses a device as claimed in claim 1. The device comprise of a nanochannel glass array (i.e. substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction) (col. 5, line 27 to col. 6, lines 13; col. 9, lines 60-67; fig. 1B and 3). The array comprise of inserting a cylindrical glass rod into an inert glass tube (col. 9, lines 62-67) (channel in parallel direction). The pair is drawn under a vacuum to reduce the overall cross-sectional area (col. 9, line 67 to col. 10, line 1). The length of the channels is about 0.1 to 1.0 mm with a diameter of 300 nm (0.07 mm^2) and a center-to-center spacing of about 750 nm (col. 10, lines 10-31). Therefore, the device of Beattie anticipates the presently claimed inventions.

Additionally, the added process limitation of "said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein" has amended claim 1 to a product-by-process claim. The instant claims are written as product-by-process claims. "Even though the product-by-process claims are limited by and defined by the

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process, determination of patentability is based on the product itself. The patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claims is same or as obvious from the product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.” In re Thorpe, 777 F. 2d 695, 698, 227 U. S. P. Q. 964, 966 (Fed. Cir. 1985). See MPEP 2113. Thus the device of Beattie would still anticipates the presently claimed device since it meets all the structural limitation of the claimed device that is substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction.

16. Claims 1, 5, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Jansen (US Patent 5,173,097).

The instant claimed device comprise of a substrate having two channels formed therein. The channels comprise of inlets, outlets, spaced apart, and are in a parallel direction. The process limitation of “said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein” has amended claim 1 to a product-by-process claim.

Jansen discloses a drawn substrate (col. 3, lines 11-17; figures 2(a) and 3(b)). The drawn substrate comprise of optical waveguide and channels that extend in a direction parallel to the length (figure 3(b); col. 3, lines 22-35; col. 44-60) (referring to claims 1 and 11). The drawn substrate include an inlets and outlets (figure 13). Although the channel length having a range of 1mm to 1km (e.g. claim 5) is not specifically disclosed, the length of the channel would be a choice as experimental design and is considered within the purview of the prior art. Therefore, the drawn substrate of Jansen anticipates the presently claimed invention.

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Additionally, the added process limitation of “*said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein*” has amended claim 1 to a product-by-process claim. The instant claims are written as product-by-process claims. “*Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claims is same or as obvious from the product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.*” *In re Thorpe*, 777 F. 2d 695, 698, 227 U. S. P. Q. 964, 966 (Fed. Cir. 1985). See MPEP 2113. Thus the device of Jansen would still anticipate the presently claimed device since it meets all the structural limitation of the claimed device that is substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction.

17. Claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-36 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Anderson et al. (US Patent 5,922,591).

The instant claimed device comprise of a substrate having two channels formed therein. The channels comprise of inlets, outlets, spaced apart, and are in a parallel direction. The device further comprise of at least one “endcap” channel (It is interpreted as the connection between two channel) being in fluid communication with at least one channel. The “endcap” substrate is interpreted as the same substrate of the device.

The process limitation of “said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein” has amended claim 1 to a product-by-process claim.

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Anderson et al. disclose a device as claimed in claim 1. The device comprises various reaction chambers and fluid passages (channels), which is manufactured onto the surface of the substrate (i.e. substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction) (col. 17, lines 59-61; fig. 12c; col. 19, lines 29-33). The fluid channels have smaller dimensions relative to the chambers and range about 10 μm wide and 1 μm deep (e.g. a cross sectional area of about 0.1mm²) (col. 18, lines 30-40) (referring to claim 4). The body of the device (substrate) comprise of glass (referring to claim 15 and 31). The surfaces of the channel may be made more hydrophobic by coating the surface (col. 20, lines 33-40) (referring to claim 19). The channel comprise of inlets and outlets valves (col. 30, lines 41-50). In figure 12c, the device comprises a plurality of channels, wherein the main channel is ref. # 1252 (col. 30, lines 26-31). The various channels connecting the chambers to the main channel are in a parallel direction. The channels comprise of a "bend" ("endcap" channel) that connect two channels together and are spaced apart (fig. 12c).

Therefore, the device of Anderson et al. anticipates the presently claimed invention.

Alternatively, the claimed invention further differs from the prior art teachings only by the recitation of the process limitation of "*said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein*". The claimed invention appears to be the same or obvious variations of the reference teachings, absent a showing of unobvious differences. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant versus the reference Anderson et al. (US Patent 5,922,591). In the absence of evidence to the contrary, the burden is upon the applicant to prove that the claimed device is different from the one taught

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by prior art and to establish the patentable differences. See in re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ2d 1922(PTO Bd. Pat. App. & Int. 1989).

The instant claims are written as product-by-process claims. *“Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claims is same or as obvious from the product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.”* In re Thorpe, 777 F. 2d 695, 698, 227 U. S. P. Q. 964, 966 (Fed. Cir. 1985). See MPEP 2113. Thus the device of Anderson et al. would still anticipate the presently claimed device since it meets all the structural limitation of the claimed device that is substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction.

18. Claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Beattie (US Patent 5,843,767).

The instant claimed device comprise of a substrate having two channels formed therein. The channels comprise of inlets, outlets, spaced apart, and are in a parallel direction. The device further comprise of at least one “endcap” channel (It is interpreted as the connection between two channel) being in fluid communication with at least one channel. The “endcap” substrate is interpreted as the same substrate of the device.

The process limitation of “said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein” has amended claim 1 to a product-by-process claim.

Beattie discloses a device as claimed in claim 1. The device comprise of a nanochannel glass array (i.e. substrate having two channels formed therein wherein the channels comprise of

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inlets, outlets, spaced apart, and are in a parallel direction) (col. 5, line 27 to col. 6, lines 13; col. 9, lines 60-67; fig. 1B and 3). The array comprise of inserting a cylindrical glass rod into an inert glass tube (col. 9, lines 62-67) (channel in parallel direction). The pair is drawn under a vacuum to reduce the overall cross-sectional area (col. 9, line 67 to col. 10, line 1). The length of the channels is about 0.1 to 1.0 mm with a diameter of 300 nm (0.07 mm^2) and a center-to-center spacing of about 750 nm (col. 10, lines 10-31). Therefore, the device of Beattie anticipates the presently claimed inventions.

Alternatively, the claimed invention further differs from the prior art teachings only by the recitation of the process limitation of *“said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein”*. The claimed invention appears to be the same or obvious variations of the reference teachings, absent a showing of unobvious differences. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant versus the reference Beattie (US Patent 5,843,767). In the absence of evidence to the contrary, the burden is upon the applicant to prove that the claimed device is different from the one taught by prior art and to establish the patentable differences. See in re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ2d 1922(PTO Bd. Pat. App. & Int. 1989).

The instant claims are written as product-by-process claims. *“Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claims is same or as obvious from the product of the prior art, the claim is unpatentable even*

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though the prior art product was made by a different process.” In re Thorpe, 777 F. 2d 695, 698, 227 U. S. P. Q. 964, 966 (Fed. Cir. 1985). See MPEP 2113. Thus the device of Beattie would still anticipates the presently claimed device since it meets all the structural limitation of the claimed device that is substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction.

19. Claims 1, 5, and 11-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jansen (US Patent 5,173,097).

The instant claimed device comprise of a substrate having two channels formed therein. The channels comprise of inlets, outlets, spaced apart, and are in a parallel direction. The process limitation of “said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein” has amended claim 1 to a product-by-process claim.

Jansen discloses a drawn substrate (col. 3, lines 11-17; figures 2(a) and 3(b)). The drawn substrate comprise of optical waveguide and channels that extend in a direction parallel to the length (figure 3(b); col. 3, lines 22-35; col. 44-60) (referring to claims 1 and 11). The drawn substrate include an inlets and outlets (figure 13). Although the channel length having a range of 1mm to 1km (e.g. claim 5) is not specifically disclosed, the length of the channel would be a choice as experimental design and is considered within the purview of the prior art. Therefore, the drawn substrate of Jansen anticipates the presently claimed invention.

Alternatively, the claimed invention further differs from the prior art teachings only by the recitation of the process limitation of *“said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein”*. The claimed invention appears to be the same or obvious variations of the reference teachings, absent a showing of

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unobvious differences. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant versus the reference Jansen (US Patent 5,173,097). In the absence of evidence to the contrary, the burden is upon the applicant to prove that the claimed device is different from the one taught by prior art and to establish the patentable differences. See *in re Best* 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray* 10 USPQ2d 1922 (PTO Bd. Pat. App. & Int. 1989).

The instant claims are written as product-by-process claims. *“Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claims is same or as obvious from the product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.”* *In re Thorpe*, 777 F. 2d 695, 698, 227 U. S. P. Q. 964, 966 (Fed. Cir. 1985). See MPEP 2113. Thus the device of Jansen would still anticipate the presently claimed device since it meets all the structural limitation of the claimed device that is substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction.

Response to Arguments

20. Applicant's arguments directed to the rejection under 35 USC 102(b) as being anticipated by Anderson et al. (US Patent 5,922,591) for claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-36 was considered but they are not persuasive for the following reasons.

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Applicant contends that the device of Anderson et al. does not anticipate the presently claimed device because “*Anderson makes no mention whatsoever of a drawn substrate made by a draw process*”.

Applicant’s arguments are not convincing since the device of Anderson et al. does anticipate the presently claimed device.

First, the device of Anderson et al. that is substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction (col. 17, lines 59-61; fig. 12c; col. 19, lines 29-33). Thus the device of Anderson et al. does anticipate the presently claimed device.

Second, the added process limitation of “*said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein*” has amended claim 1 to a product-by-process claim. The instant claims are written as product-by-process claims. Applicant is directed to MPEP 2113 with regard to the product-by-process claim.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product.).

>The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding

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“interbonded by interfusion” to limit structure of the claimed composite and noting that terms such as “welded,” “intermixed,” “ground in place,” “press fitted,” and “etched” are capable of construction as structural limitations.)<

Since the device of Anderson et al. meets all the structural limitations of the final product of process claim, the device of Anderson et al. does anticipate the presently claimed device and the rejection is maintained.

21. Applicant's arguments directed to the rejection under 35 USC 102(b) as being anticipated by Beattie (US Patent 5,843,767) for claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 was considered but they are not persuasive for the following reasons.

Applicant alleges that the device of Beattie does not anticipate the presently claimed device because the substrate and channel of Beattie's device are not made by the drawn process of the presently claimed device.

Applicant's arguments are not convincing since the device of Beattie does anticipate the presently claimed device.

First, the device of Beattie that is substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction (col. 5, line 27 to col. 6, lines 13; fig. 1B and 3). Thus the device of Beattie does anticipate the presently claimed device.

Second, the added process limitation of “*said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein*” has amended claim 1 to a product-by-process claim. The instant claims are written as product-by-process claims. Applicant is directed to MPEP 2113 with regard to the product-by-process claim.

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“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product.).

>The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding “interbonded by interfusion” to limit structure of the claimed composite and noting that terms such as “welded,” “intermixed,” “ground in place,” “press fitted,” and “etched” are capable of construction as structural limitations.)<

Since the device of Beattie meets all the structural limitations of the final product of process claim, the device of Beattie does anticipate the presently claimed device and the rejection is maintained.

22. Applicant's arguments directed to the rejection under 35 USC 102(b) as being anticipated by Jansen (US Patent 5,173,097) for claims 1, 5, and 11-13 were considered but they are not persuasive for the following reasons.

Applicant alleges that the device of Jansen Applicant's arguments are not convincing since the device of Jansen does anticipate the presently claimed device.

First, the device of Jansen that is substrate having two channels formed therein wherein the channels comprise of inlets, outlets, spaced apart, and are in a parallel direction (col. 3, lines

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11-17; figures 2(a) and 3(b)). Furthermore, the examiner disagrees with applicant assertion that the fibers of Jansen are not channels because the broadest interpretation are being apply to these terms wherein the Webster's Dictionary define a channel for example as a course through which something may be directed or move. Jansen describes the fibers as "one to conduct light to illuminate an object, and one to receive light for an image of the object" (i.e. light is directed through the fibers) (col. 4, lines 29-31), which would encompassed the broadest definition of the channel. Thus the device of Jansen does anticipate the presently claimed device.

Second, the added process limitation of "*said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels therein*" has amended claim 1 to a product-by-process claim. The instant claims are written as product-by-process claims. Applicant is directed to MPEP 2113 with regard to the product-by-process claim.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product.).

>The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Garner*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as "welded," "intermixed," "ground in place," "press fitted," and "etched" are capable of construction as structural limitations.)<

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Since the device of Beattie meets all the structural limitations of the final product of process claim, the device of Beattie does anticipate the presently claimed device and the rejection is maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MY-CHAU T TRAN whose telephone number is 571-272-0810. The examiner can normally be reached on Mon.: 8:00-2:30; Tues.-Thurs.: 7:30-5:00; Fri.: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW WANG can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct
July 9, 2004


PADMASHRI PONNALURI
PRIMARY EXAMINER